

Proposed Revisions to Advisory Circular 25-7
Flight Test Guide for Certification of Transport Category Airplanes

Revise paragraph 21a(2) as follows:

(2) Section 25.145(b) requires changes to be made in flap position, power, and speed without undue effort when retrimming is ~~not~~ impractical. The purpose is to ensure that any of these changes are possible assuming that the pilot finds it necessary to devote at least one hand to the initiation of the desired operation without being overpowered by the primary airplane controls. The objective is *to show* that ~~mean~~ excessive change in trim ~~will~~ *does not* result from the application of power or the extension or retraction of wing flaps. *The presence of gated positions on the flap control does not affect the requirement to demonstrate full flap extensions and retractions without changing the trim control.* Compliance with ~~its terms~~ § 25.145(b) also requires that the relation of control force to speed be such that reasonable changes in speed may be made without encountering very high control forces.

Revise paragraph 21a(3):

(3) Section 25.145(c) contains requirements associated primarily with attempting a go-around maneuver from the landing configuration. Retraction of the high-lift devices from the landing configuration should not result in a loss of altitude if the power or thrust controls are moved to the go-around setting at the same time that flap/slat retraction is begun. The design features involved with this requirement are the rate of flap/slat retraction, the presence of any flap gates, and the go-around power or thrust setting. *The go-around power or thrust setting should be the same as is used to comply with the approach and landing climb performance requirements of §§ 25.121(d) and 25.119, and the controllability requirements of §§ 25.145(b)(3), 25.145(b)(4), 25.145(b)(5), 25.149(f), and 25.149(g). The controllability requirements may limit the go-around power or thrust setting.*

(i4) Section 25.145(d) provides requirements for demonstrating compliance with § 25.145(c) when gates are installed on the flap selector. Section 25.145(d) also specifies gate design requirements. Flap gates, which prevent the pilot from moving the flap selector through the gated position without a separate and distinct movement of the selector, allow compliance with these requirements to be demonstrated in segments. High lift device retraction must be demonstrated beginning from the maximum landing position to the first gated position, between gated positions, and from the last gated position to the fully retracted position.

(ii) ~~The go-around power or thrust setting should be the same as is used to comply with the approach and landing climb performance requirements of §§ 25.121(d) and 25.119, and the controllability requirements of §§ 25.145(b)(3), 25.145(b)(4), 25.145(b)(5), 25.149(f), and 25.149(g). The controllability requirements may limit the go-around power or thrust setting.~~ *If gates are provided, § 25.145(d) requires the first gate from the maximum landing position to be*

to be located at a position corresponding to a go-around configuration. If there are multiple go-around configurations, the following criteria should be considered when selecting the location of the gate:

- (A) The expected relative frequency of use of the available go-around configurations.
- (B) The effects of selecting the incorrect high-lift device control position.
- (C) The potential for the pilot to select the incorrect control position, considering the likely situations for use of the different go-around positions..
- (D) The extent to which the gate(s) aid the pilot in quickly and accurately selecting the correct position of the high-lift devices.

(ii) Regardless of the location of any gates, initiating a go-around from any of the approved landing positions should not result in a loss of altitude. Therefore, § 25.145(d) requires that *compliance with § 25.145(c) be demonstrated for retraction of the high-lift devices from each approved landing position to the control position(s) associated with the high-lift device configuration(s) used to establish the go-around procedure(s) from that landing position.* A separate demonstration of compliance with this requirement should only be necessary if there is a gate between an approved landing position and its associated go-around position(s). If there is more than one associated go-around position, conducting this test using the go-around configuration with the *most retracted* high-lift device *position* should suffice, unless there is a more critical case. If there are no gates between any of the landing flap positions and their associated go-around positions, the demonstrations discussed in paragraph 21a(4) above should be sufficient to show compliance with this provision of § 25.145(d).

Revise paragraph 21c(6) as follows:

- (6) Longitudinal control, flap retraction and power application, §§ 25.145(c) and (d).

Revise paragraph 21c(6)(ii) as follows:

(ii) With the airplane stable in level flight at a speed of 1.1 V_S for propeller driven airplanes, or 1.2 V_S for turbojet powered airplanes, retract the flaps to the full up position, or the next gated position, while simultaneously setting go-around power. Use the same power or thrust as is used to comply with the performance requirement of § 25.121(d), as limited by the applicable controllability requirements. It must be possible, without requiring exceptional piloting skill, to prevent losing altitude during the maneuver. Trimming is permissible at any time during the maneuver. If gates are provided, conduct this test from the maximum landing flap position to the first gate, from gate to gate, and from the last gate to the fully retracted position. ~~The gate design requirements are specified within the rule.~~ *If there is a gate between any landing position and its associated go-around position(s), this test should also be conducted from that landing position through the gate to the associated go-around position. If there is more than one associated go-around position, this additional test should be conducted using the*

go-around position corresponding to the most retracted flap position, unless another position is more critical. Keep the landing gear extended throughout the test.